

SYSTEM DELTA 30  
DELTAGUARD UNIDEMO | USER MANUAL





# Content

## User Manual DELTAGuard Unidemo

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# General Safety

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## 1.1 This User Manual

- shall be carefully read prior to operating the fume cupboards and their components.
- shall implicitly be observed and applied.
- shall be stored at a place known by and accessible to the staff.

## 1.2 Safety Symbols

You will see the following symbols with all important safety instructions within this user manual. Strictly observe these instructions and act especially careful in these situations. Marking of the safety instructions:



### **DANGER!**

This sign shows a risk of injury for one's life, if particular rules of conduct are disregarded. Whenever you see this sign in the user manual please take all necessary safety precautions.



### **ATTENTION!**

This sign cautions you against material damages and financial as well as criminal disadvantages (e.g. loss of warranty, liability cases).



### **NOTE**

Here you will find important notes and information.

## 1.3 Conventional use

- **Fume cupboards:** The fume cupboards are determined to extract and lead off corrosive gas arising during chemical processes in a conventional laboratory environment. Each fume cupboard may only be used according to its determination (approval) and its choice of material that is either chemically, thermally or mechanically.
- **Extract air function display:** The function display is exclusively determined to control extract air flows in laboratory fume cupboards according to DIN EN 14175. Utilization in explosive areas may only be allowed for special executions and with an exact clarification of the operational conditions.
- **Fume cupboard sash control:** The fume cupboard sash control is exclusively determined for an automatic closing of fume cupboards not in use, to protect the staff (splash protection) and to avoid pollutant emission when people drop across. The automatic fume cupboard sash may not be used in explosive areas.

### 1.4 Obligations of the Operator

The operator is obliged to allow only people to work with the fume cupboard who:

- are familiar with the basic regulations about industrial safety and accident prevention.
- are instructed in the handling of fume cupboards and their components.
- have read and understood the complete user manual.

If failures are indicated or recognized which may not be removed by the operator, the manufacturer shall be informed immediately. Fume cupboards with failures may not be operated.

### 1.5 Obligations of the staff

All persons working with fume cupboards or their components are obliged to:

- keep the basic regulations of industrial safety and accident prevention.
- have read the complete user manual.

If failures are indicated or recognized the operator shall be informed immediately. Fume cupboards with failures may not be operated.

### 1.6 Liability

Warranty and liability claims, in case of personal injury or property damage are excluded, presupposed that they can be traced back to one or more of the following causes:

- Unconventional use of the fume cupboards.
- Improper commissioning, operation, cleaning, maintenance and repair of the fume cupboards.
- Operating the fume cupboards with defect safety devices or controls.
- Non-observance of the user manual with regard to commissioning, operation, cleaning, maintenance and repair.
- Unauthorized structural alterations of the fume cupboards or their components.
- Insufficient control of the parts that are subject to wear and tear.
- Catastrophes by contaminant exposure or force majeure.

If failures are indicated or recognized, the operator shall be informed immediately. Fume cupboards with failures should not be operated.

**NOTE**

The manufacturer only and exclusively bears the complete warranty for the spare parts delivered and installed by him.

**ATTENTION!**

No unauthorized alterations, additions or changes may be carried out at the fume cupboard and their components. Any measures of alteration require prior confirmation by the manufacturer. Only use original spare parts. In case of externally procured parts it is not ensured that they are designed and produced according to the strain and required safety.

**1.7 Accident prevention regulations**

The following rules and regulations shall be kept for installation jobs, commissioning, operation, maintenance and repair:

- UVVs of the trade association
- VDE guidelines
- Regulations of the local utilities (electricity, water, gas)
- Guidelines for connections, connection plans and installation schemes of Wesemann GmbH
- BGR 120 (ZH 119/1)

**1.8 Operating Safety**

Possibilities of access are given by horizontal sliding panes. If the front sash is open, polluted gas may be picked up by strong blasts in the room or by people dropping across.

- Do not place any stationary fixtures or shelves in the fume cupboard.
- Keep front sash closed for protection during the working process
- Set up tests, if possible, always in the rear part of the working area so that the air is able to circulate around the appliances.
- In case of high heat and acid load, exhaustion of polluted gas may be disturbed by a too high thermal current for standard fume cupboards that are designed only for normal strains.
- Bleeder valves behind installation doors shall always be accessible.
- Prior to working on the electrical duct, power supply shall be switched off, safe-guarded against resetting and checked for zero potential.



- Connection cable and hoses shall be arranged in such a way that they do not create a safety risk (e.g. stumbling, breaking away).
- Sliding panes shall be used as body protection when working in the fume cupboard interior.
- Do not use any abrasive or aggressive cleaners.
- Regularly check the fume cupboard interior for cracks and damages and please immediately repair them as otherwise chemicals may infiltrate the cracks.
- Immediately replace faulty connections (e.g. sockets, fittings).
- Material resistance in the fume cupboard interior shall be checked with regard to the services used for the tasks in the fume cupboard.
- Intake openings shall never be blocked.



# Installation Instructions

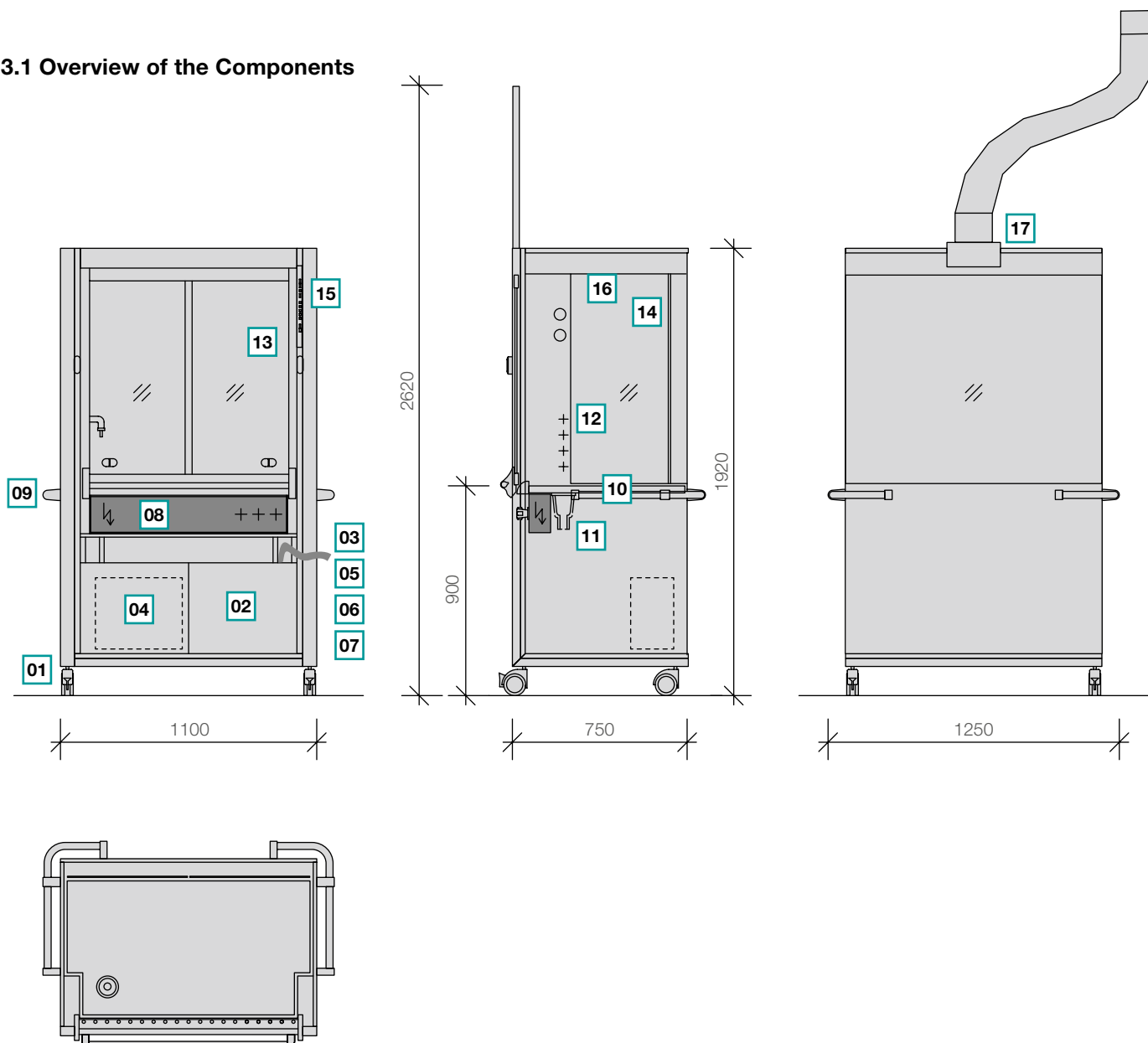
- Installation, wiring, connection jobs and commissioning may only be carried out by specialized staff from the manufacturer or by fitting and installation companies authorized by the manufacturer.
- Acknowledged engineering rules, but especially safety and accident prevention regulations shall be observed and kept for installation, wiring, connection and commissioning jobs.
- Prior to initial commissioning of electric components it shall be checked whether the operating voltage indicated on the type label corresponds to the one of the local supply voltage.
- In chapter 3, you can find an overview of the most important fume cupboard technical data. The technical data specified for each of the fume cupboards you can find in the „technical documentation“ (not included in this document). Please contact us for more details.



# Description of the Key Components

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## 3.1 Overview of the Components



**01** 4 lockable castors

**02** Storage cabinet

**03** Connector cable with plug

**04** Option: Waste water lifting unit

**05** Option: Water connecting hose with plug for coupling

**06** Option: Waste Water connecting hose with plug for coupling

**07** Option: Gas connecting hose with plug for gas-socket

**08** Aluminium channel with electrical service outlets and remote control fittings

**09** Railing handle

**10** Tabletop

**11** Option: Drip cup

**12** Option: Media Withdrawals

**13** Front sash with 2 cross-slides

**14** Shroud in 2 parts, made of safety glass

**15** Fume cupboard function display with light switch

**16** LED lighting

**17** Clutch plate exhaust with hose and coupling  
D 160 mm

### 3.2 Operating Range

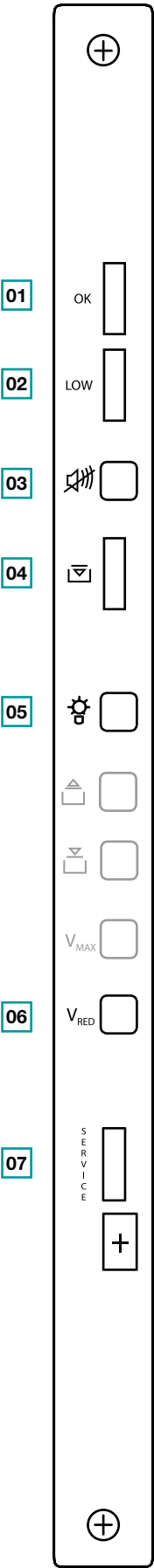
Every type of fume cupboard has a certain air technical operating range. Within this range the extract air volume may fluctuate. Relevant specifications are shown on the type labels of the fume cupboards and in the technical documents.

### 3.3 Fume Cupboard Function Display

According to the DIN EN 14175 each fume cupboard type is equipped with an extract air function display. This function display is installed at the side of the fume cupboard. Each fume cupboard shows a certain pressure drop that depends on the extracted air volume. Measurements of a fume cupboard's pressure drop is usually made through a differential pressure measurement between the laboratory and the extract air spigot of the laboratory. In this case the laboratory fume cupboard represents the streamed obstacle. The measuring outcome results are indicated by a LED.

Fume cupboard function display	Measures
<b>Display (LED)</b>	
green	<b>Normal operation</b>
green, flashing	<b>Extract air volume too high</b>
yellow, flashing <sup>1</sup>	<b>Sash above 500 mm opening height</b>
red <sup>1</sup>	<b>Extract air volume too low</b>
red, flashing <sup>1</sup>	<b>Power failure</b>
green, flashing	<b>Due for maintenance</b>

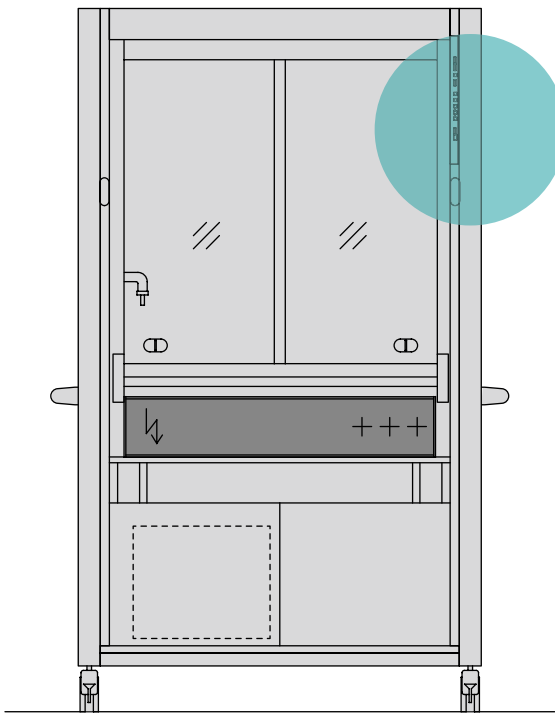
<sup>1</sup> An additional turn-off warning signal is released.



Extract air function display

- 01** Green LED illuminates when the extract air volume is within the normal range
- 02** Red LED is flashing when the extract air volume is too high or too low (sash opening between 0-500 mm). The LED is illuminating when the sash is above the opening height of 500 mm: uncertain operational state
- 03** When extract air volume too low: warning signal for 30 seconds
- 04** Yellow LED is flashing: sash above opening height of 500 mm
- 05** Switch to turn the light in the fume cupboard interior on and off
- 06** Free key - no function
- 07** When illuminating (green) please contact the Wesemann service department

\*0,14€ per minute from the german T-Com network.









# General Instructions

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4.1 General

Please pay attention to the safety instructions according to chapter 1.8

Especially pay attention to the following points:



- Keep front slide closed during tests.
- If possible, set up tests in the rear working area and on stands.
- Check surfaces for resistance.
- Check fume cupboard for possible deposits and clean it, if necessary
- Intake openings shall be free.
- Connection cables and hoses shall be safely laid/installed

4.2 Sash



Always keep the sash closed during tests and if not in operation. The sash should only be opened during the test set up. For short-term access always use the cross slides. The sash may be horizontally opened and closed by the loop handle. When opening the sash it should be opened up to the stopper that stops the sash at an opening height of 500 mm (normal operation). Beyond, the sash may only be opened by turning the loop handle. The sash should be opened beyond 500 mm only during the test set-up. As soon as the sash is pulled down it is automatically locked below the 500 mm marking.

4.3 Extract Air Function Display

Normal Operation


Extract air function display	Operating state		Measures
Display (LED)			
green	OK 	normal operation	None
green, flashing	OK 	Extract air volume too high	Press the Quit button. Please inform the technical person in charge/service. Ventilation device shall be adjusted.

## Failure

Extract air function display	Operating state		Measures
Display (LED)			
red	OK 	<b>Extract air volume too low</b>	<b>Press the Quit button. Please inform the technical person in charge/service. Ventilation device shall be adjusted.</b>
red, flashing	LOW 	<b>Power failure</b>	<b>Check voltage supply, check fuse.</b>



### NOTE

The warning signal is cleared, by pressing  the QUIT button or after expiry of the preset time. The visual error indication remains until the fume cupboard is extracting the right air volume again

## Control Keys

The key that are serially available provide the following functions:



QUIT switch to confirm (clear) the warning signals



LIGHT switch to switch the light in the fume cupboard interior on and off



# Maintenance Guidelines

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5.1 Expert Knowledge

In order to ensure the protective character of a fume cupboard, the respective safety equipment shall be maintained and checked for their efficiency in regular intervals. This obligation is based on **the technical guideline for the handling of hazardous materials (trSG) 526: laboratories**. According to these there is the obligation to have the fume cupboards checked annually. The complexity of the mechanical and air technical tests are further defined in **5.5. Test plan**.

The expert ist someone who has sufficient knowledge in the field of fume cupboard tests, due to his training or experience, and who is as familiar with the relevant national regulations for industrial safety, accident prevention regulations, guidlines and generally acknowledged engineering rules (e.g. DIN and EN standards, VDE regulations, engineering rules of other EC member states or other contractual states of the agreement for the European Economic Community) as to being able to judge the industrial safety of fume cupboards.

5.2 Maintenance contract

To be able to guarantee safely operating fume cupboards we advise you to have the maintenance and service jobs done by our service company **infralab GmbH**. The maintenance contract guarantees an ideal combination between the health protection of your employees and the protection of your lab investments. Your warranty claims are fully guaranteed. Furthermore, the professional competence of the **infralab GmbH** guarantees and documents the compliance of the regulations towards the inspecting authority.

The **infralab GmbH** is an independent company and part of the Wesemann Group. Infralab is responsible for the service and maintenance of lab facilities. **infralab GmbH, Max-Planck-Straße 12, 28857 Syke, [www.infralab.com](http://www.infralab.com)**

5.3 Cleaning plan

Cleaning plan for the DELTAGuard fume cupboards	
Cleaning tasks	Interval
Cleaning of sash	if required
Cleaning of panels	if required
Cleaning of extract air ducts	Quarterly



## 5.4 Cleaning tasks

**General cleaning tasks:** Sash and panel shall be cleaned whenever required and depending on the degree of pollution. However, a regular cleaning is suggested.



### ATTENTION!

Do not use abrasive cleaners for these cleaning tasks. For glass surfaces use a glass cleaning detergent, for all other areas a conventional household cleaning detergent is sufficient. Always apply the detergent with soft cloth only.

## 5.5 Test plan

The following testing works shall be carried out annually:

Test plan DELTAGuard fume cupboards		
Testing works, please check:	Settled	Result
Fume cupboard interior for cracks/rupture		
Worktops for cracks/rupture		
Cup sinks for cracks/rupture/tightness (optional)		
Function of bleeder valves		
Glass of lamp for damages		
Joints in the interior for cracks		
Function of the front slide		
State of the sash stopper		
Panes/handle shells for damages		
Sash ropes for damages/tightness		
Guide pulleys for wear and tear		
Rope protection device for function		
Routing of the weight basket		
Sash-poti-pulleys		

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Fume cupboard lamp for function		
Tightness of the fume cupboard connection (visual)		
Optical/acoustical alarm sash > 500 mm		
Function 500 mm sash stop		
Extract air function display for function:		
■ connections		
■ accu power		
■ limiting values		
■ light emitting diodes		
■ acoustic warning		
Set back the maintenance interval		
Extract air volume		
Jointing in the plinth area for condition		
Plinth for tightness		
Castors for damages		
Alignment of doors at underbench units		
Hinge plates for wear and tear/corrosion		
Loop handle for damages/tightness		
Drawer guide mechanism for damages		
Shelves for deformation/rupture		
Locking systems for function		
Supply lines to the stop valve		
Disposal lines to the deposit point on site		
Electrical devices according to DIN 57100/ VDE 0100, part 600		

## 5.6 Execution of Works

### Checking of Extract Air Function Display :

- Simulation of extract air failure. Once a year, an extract air failure should be simulated.
- Checking of connections. Visually check all connections for a correct fit and for the right position and damages.




#### DANGER!

- The measuring hose may neither be damaged nor kinked. It shall be tightly fixed to both, the extract air spigot and the sensor.
- Checking of limiting values. Detach the hose from the function display.
- Checking of back-up battery is checked by switching of the power supply.



#### NOTE

- Back-up battery (6V / 1.2 Ah) shall be replaced after a maximum running time of 2 years.
- Checking of the functions of the light emitting diodes. Detach the hose from the function display.
- Checking of warning signal. Switch the device off. Press QUIT key  as soon as the warning signal sounds.

### Replacement of means of Illumination:

- To illuminate the fume cupboard interior 2 x 5,3 Watt LED tubes are being used. In case of a failure of these tubes they shall be replaced immediately.



# Trouble-Shooting

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## 6.1 Error diagnostics fume cupboard function display

The following chapters contain notes for error diagnostics and error repairs. To repair some errors special tools are required and/or special knowledge is needed. In case of such errors please get in contact with the Wesemann service department or with the Infralab GmbH.

Error diagnostics fume cupboard function display		
Error	possible cause	Remedy
Light emitting diodes of the extract air function display do not shine	<ul style="list-style-type: none"> <li>No voltage</li> <li>Defect connection cable</li> </ul>	<ul style="list-style-type: none"> <li>Check voltage supply, if need be, restore voltage supply</li> <li>Replace connection cable</li> </ul>
Light emitting diodes of the extract air function display are flashing	<ul style="list-style-type: none"> <li>Setting of wrong display type</li> <li>Defect connection cable</li> </ul>	<ul style="list-style-type: none"> <li>Contact infralab</li> <li>Replace connection cable</li> </ul>
Actual value through service module not identical to the externally measured value	<ul style="list-style-type: none"> <li>Incorrect calibration</li> <li>Incorrect orifice factor</li> <li>Incorrect connection of measuring hose</li> <li>Defect connection cable</li> </ul>	<ul style="list-style-type: none"> <li>Contact infralab</li> <li>Contact infralab</li> <li>+ connection on the sensor remains free</li> <li>- connection on the sensor to be connected</li> <li>Contact infralab</li> </ul>
LED (LOW) always red	<ul style="list-style-type: none"> <li>Extract air volume too low</li> <li>No voltage on the binder for motor</li> <li>Minimum set values ( wrong setting)</li> </ul>	<ul style="list-style-type: none"> <li>Check ventilator on site</li> <li>Inform Infralab</li> <li>Inform Infralab</li> </ul>
LED (LOW) flashing red	<ul style="list-style-type: none"> <li>Power failure</li> </ul>	<ul style="list-style-type: none"> <li>Inform facility manager and/or Infralab</li> </ul>
LED (OK) always green	<ul style="list-style-type: none"> <li>Minimum set values (wrong setting)</li> </ul>	<ul style="list-style-type: none"> <li>Inform Infralab</li> </ul>
LED (OK) flashing green	<ul style="list-style-type: none"> <li>Maximum set values (wrong setting)</li> </ul>	<ul style="list-style-type: none"> <li>Inform Infralab</li> </ul>







# Technical Data

7.1 Extract Air Function Display	34
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## 7.1 Extract air function display

Technical data	
Components	Data
Power supply	230 V AC/1-phase/50Hz
Fuse protection F1	63 mA time lag
Fuse protection F2	1.0 A time lag
Operating conditions	0° bis +55°C, max. 80% humidity
Weight	ca. 1,4kg
Dimensions (Sensorbox)	187 mm x 167 mm x 92 mm (WxLxH)
Battery	6V; 1.2 Ah
Pressure range of sensor	below 10 ms
Reaction time of sensor	below 10 ms
Sensor-overload	up to 200 mbar
Sensor-bursting pressure	500 mbar





# Spare Parts List

- The spare parts list is developed up to customers' specifications and can be requested if necessary.



# Prototype Test Report

- The prototype test report can be requested or be found in the inspection documents if necessary.

[www.wesemann.com](http://www.wesemann.com)

**Service:** 0180-5-WESEMANN\*

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